CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 89-162

SITE CLEANUP REQUIREMENTS FOR:

JONES CHEMICALS, INC.
MILPITAS FACILITY
MILPITAS, SANTA CLARA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region, (hereinafter called the Board) finds that:

1. SITE LOCATION AND DESCRIPTION Jones Chemicals, Inc. operates a chemical storage and distribution facility (Site) located at 985 Montague Expressway in the City of Milpitas, Santa Clara County. Berryessa Creek flood control channel borders the western boundary of the property and lies about 200 feet west of the Site (see site location map).

2. REGULATORY STATUS Jones Chemicals, Inc., (hereinafter referred to as a discharger) is a discharger because of their ownership and occupancy of the Site during which time at least one major release of chemicals occurred.

3. SITE HISTORY In the past, the discharger received chlorine gas, sulfur dioxide, anhydrous ammonia, various acids and bases and trichloroethane by rail or tank truck and repackaged these chemicals into cylinders or drums. The discharger also manufactured sodium hypochlorite and aqua-ammonia. The apparent cause of said pollution was an explosion of a solvent tank in 1982 that resulted in discharge of as much as 4000 gallons of organic solvents to the ground and to adjacent Berryessa Creek.

4. ADJACENT FACILITY Three facilities are located downgradient from the discharger; North American Transformer (NAT) is immediately adjacent downgradient, Milpitas Business Park is located to the south, and Ford Motor Company is downgradient from the NAT facility. A groundwater pollution plume originating from the Jones facility has migrated offsite and has been detected beneath the NAT site, the Milpitas Business Park property and at the upgradient margin of the Ford site. Further investigation and cleanup of this offsite plume will be addressed in a separate action to allow sufficient time to identify other potential sources.

5. SITE GEOLOGY AND HYDROGEOLOGY The site is located within the Coast Range geomorphic province at the northern extent of the

Santa Clara Valley and the southern portion of San Francisco Bay. The ground surface is relatively flat, with a gentle slope toward the west. The facility is underlain by interbedded alluvial sediments composed of sand, gravel, silt and clay.

The uppermost 5 to 10 feet of sediment at the site is composed of gravelly clay, sand and gravel. These sands and gravels are underlain by clay, silty clay, and sandy clay, with small amounts of sand and gravel. The clays extend to a depth of more than 20 feet. The clays encountered in the upper 20 feet of sediment contain several small beds and lenses of sand, generally several inches to 1 foot thick. Hydraulic conductivities in permeable zones beneath the Site range from 2×10^{-3} to 5×10^{-4} cm/sec and are high enough to transmit the pollutants. Groundwater elevation measurements show a westward flow direction in the shallow groundwater.

6. SOIL AND GROUNDWATER INVESTIGATION Subsurface investigation by the discharger has been ongoing since the spill occurred in 1982. To date, Jones has installed over 80 onsite, nearsite, and peripheral monitoring and extraction wells and have generally defined hydrogeologic conditions and the groundwater pollution plume onsite. The wells monitor conditions onsite and at adjacent NAT, Ford and Milpitas Business Park facilities. Groundwater beneath the site, and beyond the site boundaries, has been polluted by 13 volatile organic chemicals; the seven major pollutants being 1,1,1-trichloroethane (TCA), trichloroethylene (TCE), and tetrachloroethylene (PCE), 1,1-dichloroethene (1,1-DCE), 1,2-dichloroethene (1,2 DCE), 1,1 dichloroethane (1,1 DCA), 1,2 dichloroethane (1,2 DCA).

The pollutant plume extends vertically to a depth generally limited to the shallow and intermediate water-bearing zones (less than about 70 feet below ground) onsite and extends laterally a distance of over 2000 feet offsite. Vadose zone soils beneath the southern portion of the Jones facility have been found to contain up to 19.4 ppm total VOCs with the highest concentrations occurring in the immediate vicinity of the above-ground ruptured tank. The groundwater sample from offsite extraction well E-17, located about 1200 feet northwest of the source of pollution, was found to contain 0.024 ppm of TCE and 0.010 ppm or less of TCA, 1.1-DCA, and 1,1-DCE.

7. INTERIM REMEDIAL ACTIONS The discharger responded to the spill by pumping out solvents from the storm drain and creek bed, and excavated approximately 280 cubic yards of contaminated soils from the creek bed. In 1984, the discharger began interim extraction of polluted groundwaters. Currently, 22 onsite and offsite extraction wells are pumping ground

water in an effort to cleanup the plume. The extracted groundwater is treated in an air stripper then released under existing NPDES Permit CA0028771. In the vicinity of the former storage tank, from which the solvent release occurred, a pilot study soil vapor extraction system is being installed.

8. SCOPE OF THIS ORDER This order contains tasks for implementation and evaluation of a pilot study for soil vapor extraction, and preparation and implementation of final remedial actions. These tasks are necessary to alleviate the threat to the environment posed by further migration of the existing soil and groundwater pollution, and to provide a substantive technical basis for designing and evaluating the effectiveness of final cleanup actions. This Order supersedes Order 86-074, previously adopted for this Site.

9. The Regional Board adopted a revised Water Quality Control Plan for the San Francisco Bay Region (Basin Plan) on December 17, 1986. The Basin Plan contains water quality objectives and beneficial uses for south San Francisco Bay, and contiguous surface and groundwaters.

10. The existing and potential beneficial uses of the groundwater underlying the facility include:

    a. municipal water supply
    b. domestic water supply
    c. agricultural water supply
    d. industrial service and process water supply

11. The discharger has caused or permitted, and threatens to cause or permit waste to be discharged or deposited where it is or probably will be discharged to waters of the State and creates or threatens to create a condition of pollution or nuisance.

12. The Board has notified the discharger and interested agencies and persons of its intent to prescribe site cleanup requirements and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.

13. The action is an order to enforce the laws and regulations administered by the Board. This action is categorically exempt from the provisions of the CEQA pursuant to Section 15321 of the Resources Agency Guidelines.

14. The Board, in a public meeting, heard and considered all comments pertaining to these requirements.

IT IS HEREBY ORDERED, pursuant to Section 13304 of the California Water Code, that the discharger shall cleanup and abate the effects described in the above findings as follows:

A. PROHIBITION

1. The discharge of waste or hazardous materials in a manner which will degrade the water quality or adversely affect beneficial uses of the waters of the State is prohibited.

2. Further migration of pollutants through surface runoff or subsurface transport to groundwaters or surface waters of the State is prohibited.

3. Methods employed to investigate, contain, and/or clean up polluted soil and groundwater which will cause further significant migration of pollution are prohibited.

B. SPECIFICATIONS

1. The handling, storage, treatment or disposal of waste and polluted soil and groundwater shall not create a nuisance as defined in Section 13050(m) of the California Water Code.

2. The discharger shall conduct site investigation and monitoring activities as needed to define the current local hydrogeologic conditions, and the lateral and vertical extent of soil and groundwater pollution in and contiguous to the zone of known pollution. Should monitoring results show evidence of plume migration, additional plume characterization shall be required.

3. The cleanup goal for source-area soils is 1 ppm for total VOCs. This goal may be modified by the Executive Officer if the discharger demonstrates with site specific data that higher levels of VOCs in the soil will not threaten the quality of waters of the State or that cleanup to this level is infeasible and human health and the environment will be protected.

4. Final cleanup levels and goals for polluted groundwater, onsite and offsite, shall be background water quality if feasible, but shall not be greater than the DHS drinking water Action Level (AL) or Maximum Contaminant Level (MCL), whichever is more stringent. If an AL or MCL has not been established, the level shall be in accordance with the State Water Resources Control Board's Resolution No. 68-16, "Statement of Policy with Respect to Maintaining High Quality of Waters in California", based on an evaluation of the cost, effectiveness and a risk assessment to determine affect on human health and the environment, and shall be approved by the Board. These levels shall have a goal of reducing the mobility, toxicity, and volume of pollutants.

5. If groundwater extraction and treatment is considered as an alternative, the feasibility of water reuse, reinjection, and disposal to the sanitary sewer must be evaluated. Based on the Regional Board Resolution 88-160, the discharger shall optimize, with a goal of 100%, the reclamation or reuse of groundwater extracted as a result of cleanup activities. The discharger shall not be found in violation of this Order if documented factors beyond the discharger's control prevent the discharger from attaining this goal, provided the discharger has made a good faith effort to attain this goal. If reuse or reinjection is part of a proposed alternative, an application for Waste Discharge Requirements may be required. If discharge to waters of the State is part of a proposed alternative, an application for an NPDES permit must be completed and submitted, and must include the evaluation of the feasibility of water reuse, reinjection, and disposal to the sanitary sewer.

C. PROVISIONS

1. The discharger shall notify the Executive Officer of the Regional Board within seven working days of when an extraction well has been shutdown. Failure to recommence extraction from the well within two weeks of notification shall be deemed a violation of this Order unless a longer period of shutdown is granted by the Executive Officer. Onsite extraction well E-32 and offsite extraction wells E-4, E-5, E-6, E-8, E-10, E-11, E-13, and E-15 will be exempt from this notification process because they do not pump consistently due to lowered water levels in the well vicinity caused by the high efficiency of nearby extraction wells.

2. The discharger shall comply with Prohibitions and Specifications listed above, in accordance with the following task and time schedule:

TASKS AND COMPLETION DATES

a. TASK: SUBMIT REVISED SAMPLING AND ANALYSIS PLAN
Description: Submit a technical report that contains a revised site Sampling and Analysis Plan that is acceptable to the Executive Officer and considers CERCLA guidance documents for format and content. The Plan shall contain provisions for soil, groundwater and soil vapor sampling, and a summary of the groundwater extraction system in terms of historical maintainence and proposed pumping array.

COMPLETION DATE: December 1, 1989

b. TASK: INSTALL PILOT STUDY SOIL VAPOR EXTRACTION SYSTEM IN ABOVEGROUND STORAGE TANK AREA
Description: Complete installation of pilot study soil vapor extraction system as proposed and approved by the Executive Officer.

COMPLETION DATE: December 1, 1989

c. TASK: EVALUATION OF WATER REUSE
Description: Submit a technical report evaluating the feasibility of water reuse in accordance with Specification B.5. This evaluation should consider reuse, reinjection and disposal to the sanitary sewer to the current system of release of treated groundwater to surface water through the existing NPDES permit. This evaluation shall include a projection of the cost, effectiveness, and benefit of alternative disposal options. If water reuse is feasible, this report shall include a proposal for active water reuse.

COMPLETION DATE: February 1, 1990

d. TASK: PROPOSE FINAL CLEANUP OBJECTIVES AND ACTIONS
Description: Submit a technical report acceptable to the Executive Officer that proposes final cleanup objectives and actions for the Site. This report shall contain: 1) a summary of all site investigation results in terms of geology, Site hydrogeologic conditions, and extent of soil and groundwater pollution; 2) evaluation of the effectiveness of the installed soil and groundwater interim remedial measures including total mass of pollutants removed from soil and groundwater; 3) feasibility study evaluating final remedial measures to include a possible soil vapor extraction system; 4) the recommended measures necessary to achieve final cleanup objectives; and 5) the tasks and time schedule necessary to implement the recommended final remedial measures.

COMPLETION DATE: July 15, 1990

e. TASK: COMPLETE IMPLEMENTATION OF FINAL CLEANUP ACTIONS
Description: Submit a technical report acceptable to the Executive Officer documenting the implementation of final cleanup actions as proposed and accepted by the Executive Officer in accordance

with Task 2.d.

COMPLETION DATE: 60 days after implementation in accordance with the schedule of Task 2.d., as approved by the Executive Officer.

f. TASK: FIVE-YEAR STATUS REPORT
Description: Submit a technical report acceptable to the Executive Officer containing: 1) results of any site investigative work completed; 2) an evaluation of the effectiveness of installed final cleanup measures to include total pounds of chemicals removed from soil and groundwater; 3) additional recommended measures to achieve final cleanup objectives and goals, if necessary; 4) a comparison of previous expected costs with the costs incurred and projected costs necessary to achieve cleanup objectives and goals; 5) tasks and time schedule necessary to implement any additional final cleanup measures, 6) an evaluation of the feasibility of achieving final cleanup objectives for polluted groundwater at the Jones facility, and 7) recommended measures for reducing Board oversight.

COMPLETION DATE: September 20, 1994

3. All technical reports submitted must be acceptable to the Executive Officer. Technical reports evaluating interim and final remedial measures shall include a projection of the cost, effectiveness, benefits, and impact on public health and the environment. Remedial investigation and feasibility studies shall consider the guidance provided by Subpart F of the National Oil and Hazardous Substances Pollution Contingency Plan (40 CFR Part 300); Section 25356.1(c) of the California health and Safety Code; CERCLA guidance documents with reference to Remedial Investigation, Feasibility Studies, and Removal Actions; and the State Water Resources Control Board's Resolution No. 68-16, "Statement of Policy with Respect to Maintaining High Quality of Waters in California".

4. If the discharger is delayed, interrupted or prevented from meeting one or more of the completion dates specified in the Order, the discharger shall notify the Executive Officer prior to the completion date.

5. The dischargers shall submit to the Board acceptable status reports on compliance with the requirements of this Order and regular quarterly groundwater monitoring. The first report shall be for the fourth calendar quarter

of 1989, due on January 15, 1990, and submitted quarterly thereafter. Each quarter report shall contain at least the following:

a. summary of work completed since the previous status report,
b. summary tabulation of all well construction data, and quarterly groundwater level measurements,
c. cumulative tabulation for all extraction wells of volume of extracted groundwater, chemical analysis results, and pounds of chemicals removed,
d. updated piezometric maps for all aquifers monitored and pollutant isoconcentration map, as applicable,
e. a cumulative tabulation for all soil vapor extraction wells of chemical analysis results and pounds of chemicals removed,
f. identification of any obstacles which may threaten compliance with this Order and what actions are being, or will be, taken to overcome these obstacles, and
g. discussion of events of noncompliance with this Order, including proposed tasks and time schedule to achieve compliance, identified incomplete work that was projected to be complete, and impact of noncompliance on complying with the remainder of this Order.

The discharger shall submit on an annual basis summary status reports on the progress of compliance with all requirements of this Order. The first report would be due on January 15, 1991, and would cover the previous calendar year. The reports shall include, at least, progress on site investigation and remediation, operation and effectiveness of remediation actions and systems, and an evaluation of the feasibility of meeting groundwater and soil cleanup goals.

6. All samples shall be analyzed by State certified laboratories using approved EPA methods for the type of analysis to be performed. All laboratories shall maintain quality assurance/quality control records for Board review.

7. All plans, specifications, reports, and documents shall be signed by or stamped with the seal of a registered geologist or professional engineer, or certified engineering geologist.

8. The discharger shall maintain in good working order and operate, as efficiently as possible, any facility or control system installed to achieve compliance with the requirements of this Order.

9. Copies of all correspondence, reports, and documents pertaining to compliance with this Order, shall be provided to the following agencies:

   a. Santa Clara Valley Water District
   b. Santa Clara County Health Department
   c. City of Milpitas
   d. State Department of Health Services/TSCD

10. The discharger shall permit the Board or its authorized representative, in accordance with Section 13267(c) of the California Water Code:

   a. Entry upon premises where any pollution source exists, or may potentially exist, or in which any required records are kept;
   b. Access at reasonable times to copy any records required to be kept under terms and conditions of this Order;
   c. Inspection of any monitoring equipment or methods required by this Order.
   d. Sampling of any groundwater or soil which is accessible, or may become accessible as part of any investigation or remedial action program, to the discharger.

11. The discharger shall file a report on any material changes in the nature, quantity, or transport of polluted groundwater associated with the pollution described in the Order.

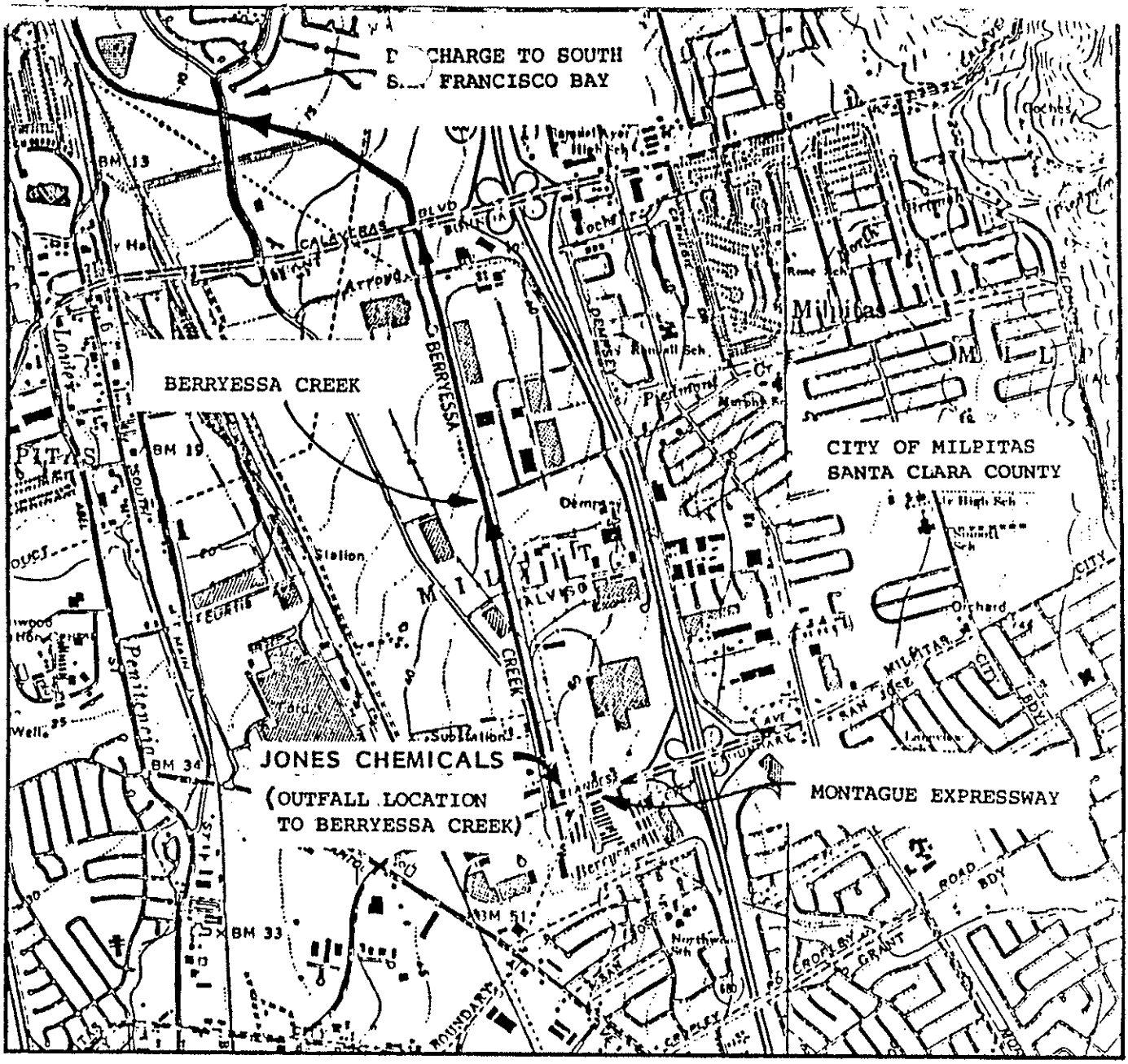
12. Order 86-074 is hereby rescinded upon adoption of this Order.

13. The Board will review this Order periodically and may revise the requirements when necessary.

I, Steven R. Ritchie, Executive Officer, do hereby certify the foregoing is a full, true and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region on September 20, 1989.

Lawrence P. Kolb
for
Steven R. Ritchie
Executive Officer

Attachments: Figure One, Site Map



Source: U.S. Geological Survey

STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SITE LOCATION MAP
JONES CHEMICALS, INC.
MILPITAS, SANTA CLARA COUNTY

DRAWN BY:	DATE:	DRWG. NO.